Impact of Mekong River biodiversity on food culture of women and children in Prey Veng, Cambodia

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Background

Situated in the heart of the Mekong River basin, the biodiversity of the Cambodian freshwaters is high with at least 475 fish species. Fisheries have shaped Cambodian culture, including traditional diets. Fish and other aquatic animals (OAA) are the main, and culturally preferred animal-source foods in a population vulnerable to food and nutrition insecurity and malnutrition.

The food culture of consuming fish with the bones and head is nutritionally valuable, providing high-quality nutrients. The objective of this study was to assess the consumption of fish and OAA among mothers and their young children, with details on species, types of processing, and which parts were consumed.

Method

We interviewed 100 mothers in Prey Veng Province in December 2010, on fish and OAA consumed by themselves and their children (one child per mother) during the preceding rainy season. To support recall of fish consumption, we used 160 cards with pictures of fish and OAA species, and 11 cards with processed fish.

Discussion & Conclusion

- Our study showed that the rich biodiversity of fish and OAA in the Mekong River basin is reflected in the food culture of mothers, but not in the diets of their children.
- Children are fed with some of the same fish and OAA species consumed by their mothers, however, species diversity in children is significantly lower than in their mothers.

![Figure 1. Accumulated consumption reported by respondents (n=100) in the preceding rainy season](image)

Accumulated number of times of consumption of fish species grouped in its order based on frequency: for non-fish, consumption of all species accumulated under Other Aquatic Animals (OAA), males in brackets show the number of species in the corresponding group or OAA group. The dashed bar of fish species as available shows the accumulated number of times mothers recognized the species to be available in their surroundings.

- While some species of fish and OAA are consumed by mothers with the head and bones and/or processed, this was not the case for their children.
- Our study demonstrate that the culture of fish and OAA consumption in Cambodia is manifested differently in mothers and their children.
- We suggest policy makers include in national dietary guidelines, a recommendation to feed young children with a larger diversity of fish and OAA species, as well as processed fish and OAA.

![Figure 2. Number of mothers and children consuming processed fish](image)

The number of participants: 100 mothers and 100 children. Values indicate the number of mothers consuming the fish and OAA species. Fisher’s exact test was used to compare the two groups (mother-child) for the presence or absence of the fish species. P-values < 0.05 were considered statistically significant.

- Nutrition-sensitive interventions should include use of traditional and modern food processing methods that would allow young children to benefit from the nutrient-rich parts, such as bones and heads of fish and OAA.
- These nutrition-sensitive actions will optimize the preservation of the biodiversity of the Mekong River basin for food culture and nutrition programs in Cambodia.

Findings

Our results showed that species diversity in the diets of mothers was higher than that of their children; on average, mothers and children consumed 70 and 14 species of fish, and eight and one species of OAA, respectively, in the preceding rainy season.

On average, mothers reported they knew of 107 fish species and 14 OAA species available in their surrounding aquatic environments. The culture of consuming fish, including the head and bones was common among mothers but not children.

Table 1. Species diversity (number of species of aquatic animals) consumed by mothers and their children in the preceding rainy season

<table>
<thead>
<tr>
<th>Number of Species of Aquatic Animals</th>
<th>Mean ± Sd</th>
<th>Median</th>
<th>2</th>
<th>Sig 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available in the surroundings</td>
<td>121 ± 31</td>
<td>129</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Consumed by mothers</td>
<td>78 ± 27</td>
<td>79</td>
<td>0.201</td>
<td>0.044</td>
</tr>
<tr>
<td>Consumed by children</td>
<td>16 ± 28</td>
<td>1</td>
<td>0.201</td>
<td>0.045</td>
</tr>
<tr>
<td>Often consumed by mothers</td>
<td>37 ± 21</td>
<td>33</td>
<td>0.271</td>
<td>0.006</td>
</tr>
<tr>
<td>Often consumed by children</td>
<td>8 ± 16</td>
<td>0</td>
<td>0.201</td>
<td>0.045</td>
</tr>
<tr>
<td>Sometimes consumed by mothers</td>
<td>26 ± 14</td>
<td>23</td>
<td>0.271</td>
<td>0.006</td>
</tr>
<tr>
<td>Sometimes consumed by children</td>
<td>5 ± 10</td>
<td>0</td>
<td>0.201</td>
<td>0.045</td>
</tr>
<tr>
<td>Seldom consumed by mothers</td>
<td>17 ± 12</td>
<td>15</td>
<td>0.201</td>
<td>0.045</td>
</tr>
<tr>
<td>Seldom consumed by children</td>
<td>3 ± 6</td>
<td>3</td>
<td>0.201</td>
<td>0.045</td>
</tr>
</tbody>
</table>

*Number of participants: 100 mothers and 100 children, Number of fish species: 143, Number of other aquatic animal (OAA) species: 17.
SD: standard deviation, t: correlation coefficient, Sig: significance probability.

![Photo: @saitumulia](image)